DOCUMENT RESUME

ED 205 491 SP 018 662

AUTHOR Doll, William E., Jr.
TITLE A Re-Visioning of Progressive Education.
PUB DATE Apr 81
NOTE 27p.: Paper presented at the Annual Meeting of the American Educational Research Association (Los Angeles, CA, April, 1981).

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Change Agents: *Change Strategies: Classroom Techniques: *Educational Change: *Educational Trends: Elementary Secondary Education: Foundations of Education: *Progressive Education

ABSTRACT

Progressive education presents a valid model on which to build educational change, but the model should be altered to take into account developments in social needs and in ideational theories. In the past 90 years, only the "child-centered" strand of progressive education has had a major impact on classroom practice. Growing out of the needs of an industrial society, progressive education succeeded in changing many of the ideals to which classroom practice aspired, but the proponents of progressive education were only able to modify the fundamental educational model and were not able to replace it. Effective change in the system must develop not in a direct or linear fashion, but in accordance with Piaget's concept of coordinated systems trying to find an equilibrium. In the past, change at the school level has been unsuccessful because the fact that schools are complex social organizations has been largely ignored. Change-oriented outsiders may demand new goals and methods, but, since schools and teachers are committed to education and not to change, the result is alienation, frustration, and hostility. Increased study of the thinking of teachers is necessary, and may lead to the finding that the principal is the key change agent. (FG)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED205491

A RE-VISIONING

OF

PROGRESSIVE EDUCATION

Wm. E. Doll, Jr.
S.U.N.Y. - Oswego

A.E.R.A. Annual Meeting
Los Angeles, California
April, 1981

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Wm. E. Doll, Jr.

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

A RE-VISIONING OF PROGRESSIVE EDUCATION

In keeping with the theme of this symposium I will address two issues: 1) whether Progressive Education produced changes in classroom practice; 2) an analysis of the factors key to a model of educational change. In regard to the first issue I will be an apologist for Progressive Education. Despite all its shortcomings, false hopes, and misbeliefs, Progressive Education did cause substantial changes in classroom practice. Today these changes form a solid base from which further changes can and should be made. In regard to the second issue, I will provide a theoretical and practical analysis of the factors key to a model of educational change.

Progressive Education appears as a behemoth once one attempts to pinpoint its origins, ascertain its demise, define its characteristics, or even locate its dates. It was composed of many and diverse strands, a lot of them intricately interwoven with the warp and woof of American intellectual thought. However, at least four strands are easily discernible: child-centeredness, creative or spontaneous-activity, social-reconstruction, and technological-efficiency. In terms of re-visioning Progressive Education, of looking at it again in a new light for new possibilities, the first strand holds the most potential.

The social-reconstruction strand has received the lion's share of scholarly analysis. Social-reconstruction in a democratic society is always caught on the horns of a dilemma: trying to balance the process of democratic decision-making with a set of fixed ends. This ideological conflict will always plague social-reconstructionists. I see little sense in devoting more ink to this issue, and do not support the contention that social-reconstruction should be the chief aim of the schools. However, I do not dismiss the fact

that all educational acts involve certain ideologies and I welcome analyses that illuminate this connection. Also, I hope social change which leads to a more humanitarian life for all will be a by-product of schooling and learning. But as Dewey has said, education must have no end beyond itself, it is its own end not a means to another end.

The technological-efficiency strand is not one we commonly associate with Progressive Education. However, a look at the University of Chicago Laboratory School after Dewey, or the Gary School System prior to and during World War I reminds us--as the revisionists are so fond of pointing out--that this movement was indeed a part of Progressive Education. However, this strand was more a part of the general scientific and reformist movement that pervaded all of American thought in the first two decades of this century than it was a characteristic of Progressive Education. It was a strand which Dewey continually attacked; and as a movement within the broad concept of industrialization it has continued to dominate much of our thinking about the nature and purpose of schooling. It has formed over the decades the mainstream of American educational thought. It shows up today in competency-based education, in mastery learning, in licensure. If a re-visioning of Progressive Education is to take place, a framework other than this mechanistic one must be developed. It is my hope and my assertion that as our society moves from an industrial to a post-industrial phase just such a framework will be built and that the goals of Progressive Education will be realized, as they could not be in a society committed to expanding industrialization.[1]

The strand of creative- or spontaneous-activity is the one most commonly referred to, especially in caricature, when the words Progressive Education are mentioned. It is the strand critics of Progressive Education commonly

draw upon; the one which has consistently given Progressive Education a bad name; and the one Dewey characterized as "a process of trying anything at least once, of putting into immediate effect any 'happy thought' that comes to mind."[2] This sort of mindless approach to teaching did characterize the popular interpretation of many in Progressive Education who did not search for its roots or theories. During the latter 1920's and all of the 1930's Dewey was continually criticizing, albeit sympathetically, these individuals for their unwillingness to distinguish between Progressive Education as a protest movement to school practices and Progressive Education as an emerging pedagogic theory. Dewey realized that Progressive Education was strongly a protest movement, reacting to the "static, authoritarian, and passive" aspects of traditional education, but he also saw the possibility of it being a teaching theory. As he said (1928):

> We already have the elements of a distinctive contribution to the body of educational theory: respect for individual capacities ... respect for self-initiated learning ... respect for activity as the center of learning; and above all belief in social contact, communication, and cooperation as an all-enveloping medium.[3]

Unfortunately Progressive Education did not develop this potential which Dewey saw for it, even though, in "The Need for a Philosophy of Education" (1934), he clearly laid out the direction such development should take.[4]

Still, Progressive Education should not be written off as a failure, even if three of the four strands did not materialize productively. The strand of child-centeredness did make a difference, both in terms of itself and in terms of the broader based nationalist and humanist movements to which it belonged. Its efforts have shown up in classroom practice, in school curricula, and in the Neo-Progressive movements of Open-Education and Curriculum Reform. The

characteristics of this strand are found in Dewey's statement about respect for individual capacities, for self-initiated learning, for activity, and for cooperation--all within a framework of faith in human thought. Indeed, Progressive Education has made us aware that all education must begin with the learner's interests and experiences, and move from and with these interests and experiences. Thus Progressive Education has told us that the answer to Herbert Spencer's famous question "What Knowledge is of Most Worth?" is not one of the disciplines, such as science; but is knowledge in which the learner can personally engage, in an active, meaningful, and transformative way. In saying this an epistemological and pedagogical shift has occurred; from considering knowledge as information transmitted logically, to ideas built psychologically as the individual interacts with himself, his world, his peers, and his teachers. This is the main point Progressive Education made, a shift from the primacy of the disciplines to the primacy of the learner. It is a point the movements following Progressive Education have also made, and it is a point which any lasting and productive theory of education will have to accept. It is not a point, though, which has occupied a dominant place in the mainstream of American schooling, or of pedagogic training. But, it is a point which has persisted throughout the century, and has been developed by Dewey and especially by Piaget. It is a point I hope we are now able to understand and accept, as we move from an industrial to a post-industrial society.[5] At least it is a point worth re-visiting and re-visioning.

Progressive Education drew much of its inspiration from Enlightenment thought. Immanuel Kant, writing on the history of human thought, uttered one of Enlightenment's stereotyped phrases. To wit:

> The human race has always been in progress toward the better and will continue to be henceforth.[6]

Support for this statement came for Kant from both a priori Reason and teleological Nature. But empirical measurement of the statement would require "immeasurable time," for Nature needs an "unreckonable series of generations, each of which passes its own enlightenment to its successor..."

While I would not argue for immeasurable time to recognize improvement in classroom practices, I would argue that we need generations; generations in which an enlightened ideal has time to ripen and mature. Further, I would argue, as Cremin has, that Progressive Education matured during the first half of this century and that -

> ... by the 1950's the more fundamental tenets of the progressives had become the conventional wisdom of American education.[7]

Arthur Zilversmit, in assessing the "Failure of Progressive Education," over the twenty-year period, 1920-1940, adds an interesting addendum to Cremin's observation. When Progressive Education was dying as a topic in educational journals and conventions it was gaining very real, mainstream strength in the metropolitan suburbs America created after World War II. Zilversmit points out that it was during this time, the 1950's, that the most vicious attacks were launched on Progressive Education: attacks that were systematic and had the effect of destroying "a form of education that was still young, relatively untried, and had unrealized potential for American school children."[8]

Thus Progressive Education was born in an era of industrialization, generally, but not always, fought against that industrial model, struggled unsuccessfully to develop its own model, and became tacitly and tentatively accepted in the emerging suburbs just before it was viciously attacked as un-American and pro-Communist. Still it spawned Open-Education, and gave partial direction to the Curriculum Reform movement of the 1960's. For the past decade it has been dormant, but remains viable, as an ideal, to provide future direction for

future generations of educational thinkers. And it has already provided direction as we have moved, during the past century, from a pedagogy based on association, to a pedagogy based on human development and information processing.

Over the years a number of studies have appeared describing and assessing teacher practices in the classroom. The following are representative: Joseph Mayer Rice, The Public School System of the United States (1893), The Regent's Inquiry into the Character and Past of Public Education in the State of New York (1939), Philip W. Jackson, Life in Classrooms (1968, Charles E. Silberman, Crisis in the Classroom (1970), John I. Goodlad, Looking Behind the Classroom Door (1974), and A Study of Schooling (1981). In reading these works three things stand out: 1) Over the years substantial and qualitative differences in classroom practice have occurred; 2) These differences are best seen when the time period is longest; 3) These differences have all occurred within the same educational model.

Taking the last first, it is quite easy to see that the overarching model dominating American schooling for well-on to a century has been teacher-centered, behavioristic, mechanistic. Thus in 1974 Goodlad stated:

> "(M)ost of the instruction emphasized the ability to remember, to recognize from previous experience, and to repeat."

And in so doing echoed Rice's statement in 1893 that:

> (T)he function of the school consists primarily, if not entirely, in crowding into the memory of the child a certain number of cut-and-dried facts ... (of) hearing them (the children) recite lessons ... learned by heart.[9]

Both of these quotes are summative statements, representing their author's overall evaluations. Thus, in the eighty-one years separating the Goodlad statement from that of Rice, little seems to have changed. But to draw such a conclusion is to judge too quickly on too little evidence.

It is quite true that the teacher-centered, behaviorist, mechanist model has not been replaced by another--despite Progressive Education's attempts at such. But within this model substantial changes have occurred, most of them centering around the progressive ideas Rice advocated. Rice stated that in a few school systems--four out of thirty-six to be exact--he found scientific or progressive principles dominating. In these there was a deliberate attempt "to lead the child to observe, to reason ... to develop naturally in all his faculties ..." He attributed this progress to the office of the superintendent. When such an office was divorced from ward politics, and devoted to hiring or training professionals, then a scientific pedagogy could emerge. But generally Rice found that the majority of teachers in the public schools did not possess a high-school certificate, having usually completed only eight grades of schooling, and were appointed to their posts by ward chairmen. Ninety days was the usual period of probation. After that, tenure was automatic. For many there was no evaluation during the ninety days--so tenure came with the job.

The result of this system was that teachers were "retained indefinitely in spite of the grossest negligence and incompetency."[10] Rice cites a few examples. He begins his book with a description of one of New York City's finest: a practicing teacher marked excellent by her principals for 25 years. Believing the child's thoughts to be worthless when he or she entered school, she supplied the child "with ready-made thoughts given in a ready-made vocabulary." In order to "Save the Minutes"--she had the children recite these

ready-made statements in as fast a manner as possible. Further, they would do this while shouting--lest time be lost by repeating--and one child would rise to issue his declamation while the other was sitting down, both speaking simultaneously and appearing as "upon the opposite poles of an invisible seesaw." Always the children would look straight ahead, and in passing paper "were obliged to grope, as if they were blind."

> The principal assured me, however, that to drill the children in this groping is not attended with much difficulty...the little five year olds learning to take and pass things like blind people during the first week or two of their school life.[15]

Hour after hour, day after day, week after week, month after month, and year after year--during their whole primary school career-this farce went on. No wonder fifty percent of those entering grade one left before grade five.

My point here is obvious. While the Goodlad and Rice quotes seem alike--and they do indicate the same, broad educational model--a look at the material supporting the quotes shows substantial classroom differences. In the 1970's teachers directed classroom discussion through their questions, and thus controlled to some degree the thoughts generated. In the 1890's teachers disallowed both discussion and thinking. Answers were verbatim and uniform, drawn from a stock set provided by the teacher. Any deviation in wording brought swift retribution. And the third grade child who hesitated to figure out "four times two" was admonished, "Don't think, tell me what you know!" Children were not allowed to leave their seats, nor even to move their hands, feet, head. When Rice asked the teacher why the children looked straight ahead when passing paper, she replied -

> Why should they when the teacher is in front of them?

An answer Rice said was "too logical to be refuted."[12]

It is possible to look upon these teaching activities as caricatures, and to dismiss them as acts by untrained and unprofessional people. Indeed they were that, but they were more. They were practical representations of the dominating pedagogic ideal of the time--associationism. This ideal stressed the concept that if drill of facts was properly sequenced then learning would be facilitated and memorization time reduced. As expressed by Thorndike (1921) this theory stated that:

> By the proper division of practice amongst bonds, the arrangement of learning so that each bond helps the others ... notable improvements over the past hit-and-miss customs may be expected.[13]

Going back to Leibniz and his theory of monads this view asserts there to be bonds or connections between remembrances or associations. Thus it is important to drill properly, in the right sequences, so that "each bond helps the others." It was this theory the teacher was implementing when she admonished the child "not to think."

This associationist theory was put forward succintly by a psychologist in 1906 when he said:

> (I)n the process of impressing any series of ideas upon the mind by repetition bonds of association are framed between all the individual members of the series. Every member of such a series acquires a tendency to bring the other members along with it when it re-enters consciousness. These bonds or tendencies are of different degrees of strength. For remote members of the series, they are weaker than for neighboring members.[14]

Because of this "association-in-series" view it was deemed appropriate, even necessary, to drill facts in a series. Arithmetic facts were thus presented

in the form 1 + 9, 2 + 9, up to 9 + 9. Since 9 + 9 was a more "remote member" of the series, and hence "weaker," it was through series drill that 9 + 9 was associated efficiently. Rice found that this method of drill was universal in all the thirty-six cities he visited. Whatever else the four progressive school systems did, they did not tamper with seried associations. And through the 1920's admonitions were made not to so tamper. As one educational theorist said (when informed that a child added 6 + 9, by adding 6 + 10 and subtracting 1):

> We should be careful about letting pupils acquire forms or roundabout schemes for securing a result in the lower grades which will prove a handicap to them in the upper grades.[15]

There are in both these quotes the related notions that "ideas can be impressed upon the mind," and that what the child or learner does "naturally" is worthless. These notions formed the pedagogical backbone of American educational practice based on psychological associations. The ideal was mental associations, the reality was endless drill on pre-set and seriated questions and answers. Thinking and thinking strategies were not part of this framework. The Progressives, from Rice on, fought this framework, advocating that the child should be honored and respected in his or her natural cognitions. Ideas were not something given, they were something created, developed by individuals "wrestling with the conditions of the problem first hand." And, as Dewey further said, "development is a definite process, having its own law."[16] This difference in pedagogical ideal explains well, I believe, the differences in classroom practice between the 1890's and the 1980's. The ideal of the 1890's was associationism, the ideal of the 1980's is a sense of developmentalism. The Progressives were in large part responsible for this shift in ideals, and

hence for those changes in classroom practice flowing from these ideals. The Progressives were not, though, able to develop a pedagogic model based on their ideals, they were not able to define that "law of development" Dewey mentioned in 1902. Rather that task is left to those of us willing and able to re-vision Progressive Education.

PART II - EDUCATIONAL CHANGE

So far I have argued that by influencing change in the ideals to which classroom practice aspired, Progressive Education can be credited, at least partially, with the observed change between the 1890's classroom and the 1980's classroom. Progressive Education did not, though, change the fundamental model dominating American educational thought and practice for the past century; it modified this model, and it humanized it, but it did not replace it. What of the future? Can this model be changed? Should it be changed? How?

I think the model should and can be changed. As I've pointed out in the Rice and Goodlad quotes the model dominating American educational thought is a behavioristic and mechanistic one centering more around the teacher's actions than around the learner's. The model's origin can be traced back to the Lockean idea of the mind as a tabula rasa, to be printed upon with the associations of repeated drills. Or the model can be looked upon in terms of Newtonian science--set, ordered, predictable, mechanistic. In either case, or in both, the model has had sufficient time to grow and to mature, and during that time a new model has begun to emerge--one, which I believe, will eventually rival and supersede the old. Both these elements--time and replacement--are important; for as Thomas Kuhn points out,[17] an accepted paradigm will be

replaced only when, 1) the accepted paradigm has had sufficient time to mature, and 2) a never, more vital paradigm emerges which can do all the old paradigm could do and some of what the old paradigm could not do. In short, an intellectual community will shift its fundamental presuppositions only when it has had time to discover important practical flaws emanating from those presuppositions, and only when it has in hand a newer, potentially more useful set of presuppositions.

The present educational model has certainly had time for maturation. It came into being after the Civil War and was set, essentially, to provide America with an industrial work force. As Callahan, Perkinson, Troen, and Tyack have pointed out,[18] the schools fitted like a glove to the hand of industrialization. In 1871 Wm. Torrey Harris, the leading educational intellectual between Horace Mann and John Dewey, stated in his St. Louis School Report:

> The first requisite of the school is order: each pupil must be taught first and foremost to conform. . . . The pupil must have his lessons ready at the appointed time, must rise at the tap of the bell, move to the line, return; in short, go through all the evolutions with equal precision.[19]

A few years later in a report which was to catapult him to national attention and eventually to the job of U.S. Commissioner of Education, Harris expanded his "order" thesis to assert that the four cardinal duties of schooling were to instill in children "habits of (1) punctuality, (2) regularity, (3) attention, and (4) silence"[20]. Four decades later Ellwood P. Cubberley continued this theme by stating that:

> Our schools are in a sense factories in which the raw products (children) are to be shaped and fashioned into products. . .[21]

It is no wonder then that at the turn-of-the-century Dewey stated that the one social change which dominated all others was "the industrial one--writ so large that he who runs may read."[22]

However, as Daniel Bell has pointed out, the industrial phase of American society is now coming to an end; we are entering a new, post-industrial phase. The values of an industrial society will not be appropriate to a post-industrial age any more than the values of an agrarian society were appropriate to the industrial age. And if history is to repeat itself to any degree a great change in schooling will occur as America moves to post-industrialism, just as it occurred when America moved to industrialism. Further, there is the emergence of a new theory of growth and development, based not on Newtonian concepts of linear order, but on modern, biological concepts of systemic order.

It is these two factors--<u>social need</u> and <u>ideational theory</u>--which I believe are prerequisite to the sort of paradigmatic educational change the Progressives advocated. Between the Civil War and World War II America was too committed to developing its view of industrialization to consider any concept of order other than a linear and mechanistic one; and certainly the Progressives were able only to criticize this order, not to develop an alternative. However, I now believe that in the next two decades social and intellectual forces will unite to produce the need and viability of a new, re-visioned educational model. Toward that end I will look briefly at the ideas of Jean Piaget and Daniel Bell--the first to help us see the nature of a new model of order, change and growth; the second to help us see the social need for such a model.

Traditional education is, as I've said, a derivation of the Newtonian view of science. This view--ordered, set, deterministic, predictable, objec-

tive, atomistic and linear--began when Copernicus suggested an alternative to Ptolemy. It was developed by Brahe, Kepler, Galileo, and solidified by Newton. It was then utilized, or expanded, by Darwin and finally overthrown by Einstein and Heisenberg. Thus it reigned supreme as the scientific view from the 16th through 19th centuries. Those 19th century Germans--Helmholtz, Titchener, Wundt--who founded the discipline of psychology were themselves trained as physicists in this Newtonian tradition. While quantum physics has broken with this tradition, psychology, learning theory, and education have not. Thus the behaviorism of teacher-centered classrooms with its emphasis on pre-set ends can be traced back to Newton and his view of a predictably ordered and coordinated universe.

One of the key elements in this view is a sense of linear order. This shows up in coordinated grids, in factor analyses, in hierarchial structurations. In education it shows up in the belief that ideas can be transmitted directly or unilaterally--with the learner as a passive, obedient receiver. Thus the industrial social need for punctuality, regularity, attention and silence was reinforced by the dominant learning theory of the time. Dewey, of course, objected to this learning theory, believing learning to be far more complex and interactive. He developed his pedagogical principles from his philosophy of interactionism. The key to this philosophy and to the learning theory which emanates from it is the notion of the learner as an active agent seeking his own way, "wrestling with the problem at first hand." Dewey expressed this view succintly and forcefully in his "The Reflex Arc Concept in Psychology."[24] The difficulty with reflex arc thought was that it considered stimuli and responses in terms of arcs rather than in terms of circuits. The movement was considered to be linear, from stimulus to response as two separate entities, rather than circuitous with the response being a culmina-

tion of stimuli sought actively by the individual, as well as the beginning of a new level of stimulus quest. Thus the relationship is not a linear one; it is a continuous, circuitous, coordinated one. To quote Dewey:

> (T)he reflex arc idea, as commonly employed, is defective in that it assumes sensory stimulus and motor response as distinct psychical existences, while in reality they are always inside a coordination and have their significance purely from the part played in maintaining or reconstituting the coordination.[25]

This notion of placing action within the broader framework of coordination and internal intentionality (purpose) is very Piagetian. Piaget does not view the world in Newtonian terms with an emphasis on the linear and the external; rather he views it in biological terms with an emphasis on equilibrated, or coordinated, systems. As he says in Biology and Knowledge, "our guiding hypothesis" is that "the living organization is an equilibrated system," always trying to find stability or equilibrium in the flux and flow of daily living.[26] Thus stimuli do not affect us directly, but always indirectly through the intermediary of our own selves as living organizations trying to keep a balance between what we can deal with comfortably and that which is new. This balance is often described by Piaget as the relationship between assimilation and accommodation, or in biological terms between homeostasis and homeorhesis. The patterns of organization he calls structures which, of course, he has sequenced in his famous series of stages. As living organisms we are actively seeking a relationship with the stimuli around us; in fact stimuli become such only as we actively interact with them. Thus the relationship is not a linear one, nor a direct one; it is interactive, circuitous, systemic. Piaget posits various types of coordinations within this general system structure--coordinations between the external and the internal, between

levels within the system, and finally between the coordinations themselves, that is between the homeostatic drive for balance and harmony and the homeorhetic drive for control and exploration.[27] What is unique about this system is its emphasis on system; it pays primary attention to neither the externality of environment nor to the internality of self but to the coordinated interaction between these two. In so doing Piaget is offering a "tertium quid" as an alternative to the conflict between empiricism and rationalism, or between behaviorism and humanism. As such Piaget is extending Dewey's notion of "an alternative... (which) is not just a middle course or compromise between the two procedures (of external imposition and unfettered naturalism)...(but) is something radically different from either." From Biology and Knowledge on Piaget has been working hard to develop the broad outlines of this paradigmatic model, both at the biological and intellectual levels. As modern day educators we have what the Progressives did not have: a model of growth and development which is a real alternative to traditional views and not merely a negation of these views. A new paradigm is here for our use, and with this paradigm we can and should re-vision Progressive Education.

In his two works on post-industrialism, The Coming Post-Industrial Society (1973) and The Cultural Contradictions of Capitalism (1976), Daniel Bell posits three types of societies--a pre-industrial or agrarian, an industrial, a post-industrial or technological. America has been through two of these societies and is now in the beginning stages of the third. Each society has its own axial principle, a sort of "organizing frame" around which the institutions of society are draped, or an "energizing principle" that provides the "primary logic" for these institutions.[29] Each of these societies has its own form of schooling, and, as we well know from our experiences in the late 19th century, when a society makes a major shift from one type to another the method of schooling changes rapidly and radically. Selwyn Troen in his article on

"The Discovery of the Adolescent" points out that the 1892 Report of the Committee of Ten commended that the high school curriculum emphasize "The traditional subjects of English, mathematics, geography, history and foreign and ancient languages."[30] At this time entrance to many colleges was still in terms of set Latin and Greek exercises. College was designed to produce "an elite steeped in the genteel tradition--men of culture, men of virtue."[31] Eliot, Harris and others tried to change this tradition by allowing more professional subjects. But still this was not enough and by 1918 the Cardinal Principles of Secondary Education "directly repudiated" the 1892 model arguing the need for a comprehensive high school including courses in agriculture, business, industrial and fine arts, and household tasks. What had brought this swift and radical change? Industrialization, of course, specifically the pneumatic tube and the cash register. These two devices in five years (1900-1905) virtually eliminated one-third of the city department stores' work force, all youths in the high school and pre-high school age range. Thus the accepted pattern of three or four years of primary schooling, followed by employment as a goods or money "runner" in a department store, was abruptly changed. During the same general period of time, the need for bookkeepers, a more highly trained skill, increased 2,500 percent. With industrialization came new social needs and new forms of schooling. Post-industrialism should bring just as radical changes.

Bell comments that in an industrial society men and machines are coordinated; that industry requires semi-skilled workers; that the key social unit is the factory or corporation; and that the axial principle is growth of production much along the lines of Frederick Taylor's "laws of scientific management." Interestingly, money is more important than technology, for the technology is really quite simple.

> (The major industries were) mainly the creation of inventors, inspired and talented tinkerers, who were indifferent to science and the fundamental laws underlying their investigations. Kelly and Bessemer were unaware of the true microstructure of steel. Alexander Graham Bell was in Clerk Maxwell's opinion a 'mere elocutionist.' Edison's work on 'etheric sparks' was undertaken outside the theoretical research in electromagnetism and even in hostility to it.[32]

Since American industrial society was, in its inventions, lead by "talented tinkerers," experimentation and research were only a cut above trial-and-error. Thus there was no need for America to develop a pedagogy based on teaching children to think, as Rice advocated. The industrial world was not requiring thinking skills. Rather, the virtues of regularity, punctuality, order and silence would admirably suit a graduate to the demands of industrialism. As Cubberley said, "it is the business of the school to build its pupils according to the specifications laid down."

Following the same analogy it is easy to see that the needs and demands of a post-industrial society are quite different from those of our recent industrial one. A post-industrial society can be characterized as automated, knowledge-based, leisure-oriented, technological, service-moded, or all the preceding. But whatever characteristics are focused on they will be governed by the axial principle of "the centrality of theoretical knowledge."

> In the post-industrial society, what is crucial is not just a shift from property or political criteria to knowledge as the base of new power, but a change in the character of knowledge itself. What has now become decisive for society is the centrality of theoretical knowledge, the primacy of theory over empiricism, and the codification of knowledge into abstract systems of symbols that can be translated into many different and varied circumstances.[33]

Thus, where Industrialism downplayed the theoretic, post-industrialism emphasizes it. This change will bring a major shift in curriculum and teaching, such a major shift that movements like the "new math" are bound to surface again (hopefully in a better form). This will happen because the knowledge useful to an industrial society has been simple and linear. But in a post-industrial society the knowledge of most worth will be that which is complex, theoretical, and abstract. As Bell has said, what will ultimately change will be the character of knowledge itself, and with this change will come a change in curriculum, in schooling, in classroom practice. In the first half of this century the social situation was not right for Progressive Education, and the best it could hope to be was a counterforce to the dominant trend of behaviorism. The situation is different now and many of the ideals Progressive Education tried to foster--intellectual, creative, social--are ideals the emerging post-industrial society needs.

The Schools and Change

Having argued that society is ready for educational change I now wish to focus on the schools and their relation to change. In his book, The Culture of the School and the Problem of Change,[34] Seymour Sarason analyzes the interrelationship of school culture and change from his perspective of directing the Yale Psycho-Educational Clinic in the 1960's. Sarason and his colleagues approached the schools "with the specific aim of rendering some kind of service" as opposed to using the schools for their own research purposes. The general service rendered was that of helping the schools understand their relation to the change process. The specific issue analyzed was the introduction of new math in grades 4 to 6. As Sarason points out, the schools are less than enthusiastic about such outside help, for they have learned from past experience "that if a stranger comes into the school the odds are very high that when he leaves he will have some very unkind things to say."[35]

The reasons for outsiders making these unkind remarks are two. The obvious one is that the schools are not committed to change while those coming into the schools for aid and analogies are. Hence there is a fundamental and natural conflict. But behind this difference of perspectives there lies a more pervasive and less obvious problem; the complexity of schools as social organizations. Sarason believes that schools as social organizations have been so little studied that both insiders and outsiders "show an amazing degree of ignorance about the culture of the school ... and the modal process of change." Thus, he says:

> (T)hose who are responsible for introducing change into the school culture tend to have no clear conception of the complexity of the process ... of how the school works, the conditions wherein it changes, and the process whereby the changes occur.[36]

It is only natural the schools would not be change oriented; they are social organizations, and as such, tend to perpetuate themselves and the status quo. In regard to the new math, the impetus did not come from the teachers; they were in no way "hurting because of the existing curriculum." Nor were they consulted or even informed about the pending change. Rather they were asked (told) to implement a change decided without their input. Thus the change process is from top-down, it separates the means (the teachers) from the ends (goals decided by others). In industry this change model has worked relatively well, but as any management trainee knows its success depends upon the quality and frequency of supervision. But teachers do not receive such; they work quite autonomously in their own classrooms on materials and curricula not of their devising. Thus on the one hand teachers do not participate in the decision-making process and on the other are not well supervised in what they do. This dilemma leads to many difficulties--alienation, frustratration, hostility on the part of the

teacher, and a school culture where the process and development of thought are not the primary goals.

Behind this somewhat obvious analysis of schools and change there lies a subtler, more complex analysis. Sarason points out that the lack of a theory as to how schools handle change produces a sort of monolithic thinking--a thinking where teachers agreed with administrators "on where decision-making should and did reside," a thinking which accepted product over process, and a thinking that did "not accept the idea that there were other ways of thinking."[37] In short, the school culture, the training-of-teachers, and the hierarchial structure all combine to encourage the teacher to accept an undue emphasis on product with very little, if any, attention paid to the process of thought and the universe of alternatives in which thought exists. Sarason illustrates this point in the following, dramatic statement:

> As we pointed out in chapter 4, the new math is taught in much the same ways as the old math. It could not be otherwise if for no other reason than those who pushed for the change seemed unaware that the theories of learning and thinking that guide teachers... do not permit the process of thinking to be an object of inquiry in the classroom.[38]

It is this lack of insight which accounts for most of the failure change agents experience when dealing with the schools. And behind this failure to look into teachers' ways of thinking lies the broader failure of a systematic analysis of the nature of change in schools. The schools are complex social organizations, and to implement change requires study of this complexity.

The individual best able to bring change into this complex process, Sarason believes, is the principal. The principal has been a teacher, and he is a key part of the structural organization of the school. Thus he has the opportunity for focusing on "the interaction between structure and individuals," which Sarason believes is key.[39] The principal, in his role, has the opportunity for

working with teachers to help them focus on "ways of thinking, patterns of relationships, and the awareness of alternatives."[40] When such a focus does occur teachers will no longer be powerless, thinking in school will have a direct relation with thinking in life, Progressive Education will be re-visioned, the character of knowledge will be changed, and this new era will "usher in the true kingdom of God"--Hallelujah!

FOOTNOTES

1. For more on this topic see my "Schooling in a Post-Industrial Society," in The High School Journal (Vol. 61, No. 8, May, 1978).

2. John Dewey, "Progressive Education and the Science of Education," (1928) in R. D. Archambault ed., John Dewey on Education (Chicago: The University of Chicago Press, Phoenix edition, 1974), p. 169.

3. Ibid., p. 171.

4. Here he says that this direction is "radically different" from either traditionalism or laissez-faire individualism. Echoing his earlier comments in "The Child and the Curriculum," he calls for an understanding of development and its laws. See "The Need for a Philosophy of Education," Archambault, pgs. 7-10, and "The Child and the Curriculum," Archambault, pgs. 346-349. Only Jean Piaget seems to have picked up on this radically different direction to which Dewey was alluding. See my "A Structural View of Curriculum," in Theory into Practice, (Vol. XVIII, No. 5, Dec. 1979) pgs. 336-348.

5. In separating the logical from the psychological, the disciplines from the learner, I do not wish to create an unbridgeable dichotomy between the two; that would be very non-Deweyan. Rather I wish to argue for an interactionist model, as Dewey, Piaget, and Bruner do. Again, see my "A Structural View of Curriculum."

6. This and the following quotes are from Immanuel Kant, "An Old Question Raised Again: Is the Human Race Constantly Progressing?", and "Idea for a Universal History from a Cosmopolitan Point of View," in L. W. Beck, ed., Kant On History (Indianapolis, Indiana: Bobbs-Merrill Company, The Library of Liberal Arts, 1963), pgs. 147, 148, 13.

7. Lawrence Cremin, Public Education (New York: Basic Books, Inc., 1976), p. 19.

8. Arthur Zilversmit, "The Failure of Progressive Education, 1920-1940," in Lawrence Stone, ed., Schooling and Society (Baltimore: The Johns Hopkins University Press, 1978), p. 261.

9. John I. Goodlad; Looking Behind the Classroom Door (Worthington, Ohio: Charles A. Jones, 1974), p. 53, Joseph M. Rice, The Public School System of the United States (New York; Arno Press, 1893, 1969), p. 20.

10. Rice, p. 15.

11. Ibid., pgs. 30-36. This particular quote is on p. 33.

12. Ibid., p. 32.

13. E. L. Thorndike, The Psychology of Arithmetic (New York: The Macmillan Co., 1922), p. 137; and "The Psychology of Drill in Arithmetic," in The Journal of Educational Psychology (Vol. 12, No. 4, 1921), p. 194.

14. C. E. Browne, "The Psychology of Simple Arithmetical Processes," in The American Journal of Psychology (Vol. 17, No. 1, 1906), p. 9.

15. J. H. Smith, "Arithmetic Combinations," in The Elementary School Journal, June, 1921, pgs. 764-765.

16. John Dewey, Democracy and Education (New York: The Free Press, 1916, 1944), p. 159; and "The Child and the Curriculum," in Archambault, Dewey on Education, p. 348.

17. Thomas Kuhn, The Structure of Scientific Revolutions (Chicago: The University of Chicago Press, 2nd edition, 1970). pgs. 74-77.

18. Raymond Callahan, Education and the Cult of Efficiency (Chicago: University of Chicago Press, 1962; Henry Perkinson, The Imperfect Panacea (New York: Random House, 1968, 1977); Selwyn K. Troen, "The Discovery of the Adolescent," in L. Stone, ed., Schooling and Society (Baltimore: The Johns Hopkins University Press, 1978); David B. Tyack, The One Best System (Cambridge, Mass., Harvard University Press, 1974).

19. Quoted in Tyack, p. 43.

20. Ibid., p. 50; and in Perkinson, p. 170.

21. Ellwood P. Cubberly, Public Administration (Boston: Houghton, Mifflin, 1916), p. 338.

22. John Dewey, "School and Society," in Archambault, p. 296.

23. For more on this see my "Curriculum, Order, and the Concept of Change," in The Journal of Curriculum Theorizing (printing date not yet set).

24. John Dewey, "The Reflex Arc Concept in Psychology," (1896), in J. A. Boydston, ed., The Early Works of John Dewey, 1882-1898, (Carbondale: Southern Illinois University Press, 1972), Vol. 5. pgs. 96-109.

25. Ibid., p. 99. Underlinings mine.

26. Jean Piaget, Biology and Knowledge (Chicago: The University of Chicago Press, 1971), p. 26.

27. Piaget devotes much of his The Development of Thought: The Process of Equilibration to this thesis of coordinations. Note that Piaget's view of coordination is not the Newtonian one of coordinate geometry but the biological one of living systems, represented by such as the double-helix of D.N.A.

28. Some representative works are: The Development of Thought (New York: The Viking Press, 1975); Behavior and Evolution (New York: Pantheon Books, 1976); Adaptation and Intelligence (Chicago: University of Chicago Press, 1980), see also H. Gruber and J. Voneche, eds., The Essential Piaget (New York: Basic Books, 1977).

29. Daniel Bell, The Coming Post-Industrial Society (New York: Basic Books, 1973, p. 13.

30. Selwyn K. Troen, "The Discovery of the Adolescent, 1900-1920," in Stone, p. 247.

31. Henry J. Perkinson, The Imperfect Panacea (New York: Random House, 2nd edition, 1977), p. 177.

32. Bell, p. 20.

33. Ibid., p. 343.

34. Seymour B. Sarason, The Culture of the School and the Problem of Change (Boston: Allyn and Bacon, Inc., 1971).

35. Ibid., p. 11.

36. Ibid., p. 9, see also p. 2.

37. Ibid., pgs. 181 and 37.

38. Ibid., p. 181. Underlinings mine.

39. Ibid., p. 231.

40. Ibid., p. 233.